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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,728

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EXAMINER

WARTALOWICZ, PAUL A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,728	<b>Applicant(s)</b> FUJINO ET AL.	
	<b>Examiner</b> PAUL A. WARTALOWICZ	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/25/08, 4/8/8, 10/11/05</u> .                                | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of the method, claims 3-14 in the reply filed on 1/15/09 is acknowledged. Applicant did not set forth arguments as to why the restriction is improper. Therefore, the requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eyidi et al. ("Growth of CeO<sub>2</sub> thin films...") in view of Hans Thieme et al. (US 6458223) and Fujimoto et al. (US 5498881) and Hsu (US 6569745).

Eyidi teaches a method of making a superconducting (pg 15) wherein nickel substrates are hot rolled and then hot rolled, cold rolled to achieve a certain deformation

Art Unit: 1793

(this appears to be a planarizing step), annealed, cleaned wherein after cleaning an intermediate layer of CeO<sub>2</sub> is deposited therein, wherein a YBCO superconductor is disposed thereon (pg 20).

Eyidi fails to teach the planarizing depth, the crystal axis offset, and the surface roughness.

Fujimoto teaches a process for making superconductors (col. 1) wherein the substrate is irradiated with an ion beam for the purpose of forming an angle in a discontinuous portion of 30° (col. 5). The angle formed corresponds to a critical current density at the junction (col. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide an angle of about 30° (col. 5) formed in the planarized layer in Eyidi in order to provide the desired critical current density as taught by Fujimoto.

The prior art range is so close that one skilled in the art would have expected it to have the same properties. *Titanium Metals Corp. v. Banner*, 227 USPQ 773.

Hans Thieme et al. teach a method of making a superconductor (col. 1) wherein the roughness of the substrate corresponds to the current carrying capability of the superconductor film wherein the roughness is 10-20 nm Ra (col. 11-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a roughness of 10-20 nm Ra (col. 11-12) for the metal substrate in Eyidi in order to maintain a certain current carrying capability of the superconductor film (col. 11-12) as taught by Hans Thieme et al.

Art Unit: 1793

Hsu teaches a method of making a superconducting article (col. 1) wherein it is known to planarize a layer to a thickness of between 50-500 nm (col. 2).

Therefore, it would have been obvious to one of ordinary skill in the art to planarize a layer to a thickness of between 50-500 nm (col. 2) in Eyidi in order to produce a superconducting article as taught by Hsu.

Claims 6, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eyidi et al. ("Growth of CeO<sub>2</sub> thin films...") in view of Hans Thieme et al. (US 6458223) and Fujimoto et al. (US 5498881) and Hsu (US 6569745) and Akedo et al. (US 6827634).

Eyidi teach a method of making a superconductor as described above in claim 3.

Eyidi teaches rolling the substrate (pg 15).

Akedo teaches a method for depositing a layer on a substrate (col. 1) wherein it is known to use a mirror roller for the purpose of planarizing a material layer (col. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a mirror roller in Eyidi in order to carry out planarization as taught by Akedo et al.

Claims 4, 5, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eyidi et al. ("Growth of CeO<sub>2</sub> thin films...") in view of Hans Thieme et al. (US

Art Unit: 1793

6458223) and Fujimoto et al. (US 5498881) and Hsu (US 6569745) and Goyal et al. (US 6451450).

Eyidi teach a method as described above in claim 3.

Eyidi teaches annealing the substrate after planarization for the purpose of forming a biaxial cube texture (pg 15) but fails to teach the conditions of the annealing step.

Goyal however teaches a method of making a superconductor (col. 1) wherein a substrate is annealed in a vacuum furnace or reducing gas for the purpose of forming a cube texture (col. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the substrate annealed in a vacuum furnace or reducing gas in Eyidi in order to form a cube texture (col. 5) as taught by Goyal et al.

Claims 7,8, 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eyidi et al. ("Growth of CeO<sub>2</sub> thin films...") in view of Hans Thieme et al. (US 6458223) and Fujimoto et al. (US 5498881) and Hsu (US 6569745) and Goyal et al. (US 6451450) and Akedo et al. (US 6827634).

Eyidi teach a method as described above in claim 3.

Eyidi teaches annealing the substrate after planarization for the purpose of forming a biaxial cube texture (pg 15) but fails to teach the conditions of the annealing step.

Art Unit: 1793

Goyal however teaches a method of making a superconductor (col. 1) wherein a substrate is annealed in a vacuum furnace or reducing gas for the purpose of forming a cube texture (col. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the substrate annealed in a vacuum furnace or reducing gas in Eyidi in order to form a cube texture (col. 5) as taught by Goyal et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz  
March 27, 2009

/Stanley Silverman/  
Supervisory Patent Examiner, Art Unit 1793